

-2-

Amendments to the Claims:

1.-17. (Cancelled)

18. (New) A ball bearing comprising:

an inner race and outer race serving as a mounting device and for guidance of a rotating machine component during normal operation;

an emergency bearing defined by:

5 emergency bearing surfaces disposed concentric relative to an axis of rotation, one of the concentric bearing surfaces being a component of a rotating bearing race and the other of the concentric bearing surfaces being a component of a stationary bearing race;

10 the emergency bearing surfaces being disposed opposite to each other during normal operation with a relatively narrow gap defined therebetween, such that in the event of failure of the ball bearing, the emergency bearing surfaces of the emergency bearing are configured to assume mounting and guidance functions of the failed ball bearing only during a one-time emergency rundown to a standstill 15 of the rotating machine component;

a size of the gap being selected in such a manner that the emergency bearing surfaces positioned opposite each other are in contact with each other only during the emergency rundown, such that damage to the rotating machine component is avoided.

19. (New) The bearing according to claim 18, wherein the concentric emergency bearing surfaces extend in an axial direction.

20. (New) The bearing according to claim 18, wherein the concentric emergency bearing surfaces have in cross-section of a step shape.

-3-

21. (New) The bearing according to claim 18, wherein the concentric emergency bearing surfaces extend obliquely relative to the axis of rotation.

22. (New) The bearing according to claim 18, further including:
a bearing lid defined by projections on which the emergency bearing surfaces are carried.

23. (New) The bearing according to claim 18, wherein the gap between the emergency bearing surfaces is less than 0.1 mm.

24. (New) The bearing according to claim 18, wherein the gap between the emergency bearing surfaces is less than 0.05 mm.

25. (New) The bearing according to claim 18, wherein the emergency bearing surfaces are fabricated of steel.

26. (New) The bearing according to claim 18, wherein the emergency bearing surfaces are fabricated of tempered roller bearing steel.

27. (New) The bearing according to claim 18, wherein at least one of the emergency bearing surfaces is coated.

5

28. (New) A machine including:

a stator;

a rotor which supports itself on ball bearings;

a drive which drives the rotor;

a converter which, in response to an increase in driving power by a preselected amount, switches the drive to a failure mode;

at least one of the ball bearings being equipped with an emergency bearing, according to claim 18;

-4-

- 10 the emergency bearing surfaces being made of a material such that friction generated during the emergency rundown increases the driving power by the preselected amount and the converter switches over to the failure mode.

29. (New) The machine according to claim 28, wherein the emergency bearing surfaces are made of steel.

30. (New) The machine according to claim 28, wherein the emergency bearing surfaces are made of tempered roller bearing steel.

31. (New) The machine according to claim 28, wherein at least one of the two emergency bearing surfaces is coated.

32. (New) The machine according to claim 28, wherein the machine is a friction vacuum pump.

33. (New) The friction vacuum pump according to claim 32, further including:

a blocking gas device.

34. (New) The bearing according to claim 27, wherein the emergency bearing surfaces are coated with a material which (1) increases an amount of friction, and (2) reduces a tendency of the bearing surfaces to seize.

35. (New) The bearing according to claim 18, wherein the emergency bearing surfaces are configured such that in the event of the failure of the ball bearing, the emergency bearing surfaces form a friction bearing which (1) assumes the mounting and guidance functions of the failed ball bearing,
5 (2) increases friction which is sufficient to trigger a failure mode in a drive which is driving the rotating machine component and bring the rotating machine component to a stop.

-5-

36. (New) A ball bearing having an inner race which supports a rotor of a machine, which rotor is adapted to be driven by a drive, the bearing comprising:

- 5 an outer race configured to be supported by a stator;
- 10 an inner race configured to support the rotor;
- a plurality of balls or rollers between the inner and outer races;
- an emergency bearing including:
 - 10 a pair an annular emergency bearing surfaces, one of the bearing surfaces disposed on the inner race and the other of the bearing surfaces being disposed on the outer race, the bearing surfaces having a gap therebetween which is maintained during normal operation of the bearing, which gap is less than 0.1 mm,
 - 15 the bearing surfaces being constructed of a material which, in the event of a failure of the ball bearing bringing the bearing surfaces into contact with each other (1) maintains the position of the inner and outer races relative to each other, (2) applies a frictional drag bringing the inner race and supported rotor to a stop, and (3) which avoids seizing such that the inner race and the rotor rotate to a stop while maintaining the relative rotational positions of the inner and outer races, hence the rotor and stator, to prevent damage to the rotor and stator.
 - 20